INTERNATIONAL JOURNAL OF LATEST TECHNOLOGY IN ENGINEERING, MANAGEMENT & APPLIED SCIENCE (IJLTEMAS)

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

Green Parapets Analysis and Environment of Port Harcourt Nigeria

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DOI: https://doi.org/10.51583/IJLTEMAS.2023.121102

Received: 02 November 2023; Accepted: 09 November 2023; Published: 07 December 2023

Abstract: The prostration of policy makersfor the compulsory inclusion and retaining of greens in neighbourhoods and urban hemisphere generallydeclines the mitigation ofdissimilar environmental calamities. This paper x-rayed urban green parapets and environmental appearance of Port Harcourt Nigeria through the adoption of inferential and non-inferential survey strategies. The primary data was acquired through5 likertpoints designed questionnaire that sampled 350 households while circulated materials acquired within the secondary research circumference emanated from text-books, undergraduate and post graduate research work, conference/seminar, working papers, official records and other academic reports. The analysis employed mean value (MV), spearman's correlation coefficient and chi-square (x^2) statistics test at 0.05 significant points. The finding shown thatmean score of (25.22) significant value for the low income,(29.21) medium income resident and high income population with a mean value of (24.22) for thevariation of green properties among residents of Port Harcourt.The result further reserved that urban greens,reductions of flood and improvement of environmental potentials had a strong relationship at (x^2 = 499.87> 0.005) and there was a positive relationship between environmental greening and education attainment at (r=-.285), weak relationship exist between greening and human population (r= - .053),occupational prestige and urban greening (r-.043). The work recommended thatphysical planning efforts are required for the provision and protection of green infrastructure through constituted taskforce on green infrastructure, civil defence and neighbourhood vigilantes or guard. The provision of such social security personnel will protect and improve urban and peri greens and areas perceived green infrastructure insecure will reduce and thus declining environmental calamities associated with alteration and non-inclusion of greens in urban development.

Keywords: Green, Parapets, Analysis, Environment, Port Harcourt and Nigeria

I. Introduction

Generally, the greenings of urban settlements seem todemonstrateprerequisite in town planning and development ofhabitable physical environment to realize sustainability and quality health globally. Butthe alteration and exclusion of greens in humansettlements generates multifaceted environmental calamities which could manifest inform ofair, noise and water pollution,erosion and floodetc in urban centres (Ubani Tobi and Amakiri 2023). The recent work of Tobi, Amakiri and Neebee (2023) stressed that urban greens appears in form of public parks, urban gardens and related activities that delivers sustenance, aesthetics, quality air, subtraction of noise and air pollution, calming of environmental heats, subversion of storm water, groundwater regeneration and associated services. Their explanation maintained thatplannedactions and holistic framework prescribing the declineof greensseems to be much in many urban centresassociated with pitiable environmental qualities especially theurban hemisphere of developing nations were greens are encountering pressure and unquantifiable alteration induced by anthropogenic actions. The responses for these alteration and pressure recorded unenthusiastic strategies and backgrounds to decline the menace and encourage greens survival, existence, maintenance and advantages on the environment, as a component of physical planning. Unlike urban centres of developed nations built with parks, forests, green roofs, streams, and community gardens, provide critical ecosystem services and promotes physical activity, psychological well-being andpublic health of urban liveability.For current climate deviation and long term diseases,Marianne (2019) observed that greens produce co-profits for human health, friendly environment and decline chronic sickness starting from the symptoms, anxiety, obesity and cardiovascular disease. In Nigerian and Port Harcourt irrefutably, green areas are experiencing unprecedented alteration, conversion and unprotected for the past three decades. Measurements show that 95% of her urban greens areconverted to dissimilar land uses prompted byhigh population, poor planning and management especially the urban recreational areas properly designed for relaxation and passive leisure, though scarcity of space, poor implementation of master plans and non-inclusion of greens in micro land use planning further constitute the problems of greens in urban centres.(Ubani, Tobiand Amakiri 2022).However, the poor governmental actionson none restructuring or re-planting of greens have accentuated numerous problems and some of the problems include flood, erosion, rain storm, high wind/temperature, escalation of informal settlements,

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

airand noise pollution,poor spatial arrangement, and reduction of aesthetics environment. The impact of green alteration on public health and residents especially the poor income neighbourhoods are linked with scanty and chronic sickness such as depression, obesity and heart attack etc.

The steps to address the problems associated with green infrastructure alterationand neglect throughpublic,privatesectors andmulti-national involvement aimed at improving the environment using greens to arrives at city resilient and sustainable development expectation failed. Some of the encouragement and awareness programmes heldinclude enlightenment campaign on public health, informal alteration and conversion of green areas, national policy on green developmentetc.But these efforts failed toyield the desired result due to the ideology of altering trees and grasses during the formal and informal development that have persisted and attributed to the inability of the policy makers to retain all the benefits of green infrastructure on the environment. Therefore, imperative measures are built to identify all theexpected benefits necessary for the development and protection of greens in Nigeria. In view of this, theresearchfocuses on analysing greenparapets and environment of Port Harcourt Nigeria and with view of reducing environmental calamities through greens.

Practice Empathetic and Population Density on Environment Green Infrastructure

According to Ubani, Tobi and Amakiri (2023), alteration of green infrastructure in urban and rural environs nowadaysoriginate from inhabitants densities triggered bypoor practices, understanding and the necessity for built environment.However, the neighbourhood of high densities experience more alteration and conversion of green infrastructure that assist urban environment to adjust climate variation and otherecological services. The deprived, poor understanding and destruction of such components of scientific and spontaneous settlements has direct effect on physical, social and economic aspect of urban and rural sceneries across the third world countries. The insignificant usage and application of green infrastructure for smart and resilience cities building gainedless encouragement and experiences from earlier design standards, regulatory pathways and financing. In Nigeria, the contemporaneousmanagementtroubles not concerning the deterrence, extenuation, climatic modification management, flood regulation, and other environmental advantages and safeties green infrastructure inject to build and natural environment expectAbuja the administrative headquarters of Nigeria. Accordingly, the city administration of Port Harcourt failed to adopt special treatment on inclusive physical planning directions that instructed for the realization of garden, smart and resilience cities, toeradicate flood and other environmental difficulties connected to human settlements.

Green Walls/Parapets Alteration and Physical Planning Attention in Nigeria

In Nigeria, irrespective of procrastination and poor managerial system on green infrastructural development and protection to realise human comfort and quality environment, built environment professionals struggle to retain greens in residential, industrial, commercial, institutional and recreational land uses in spontaneous and scientific environment to eliminate environmental catastrophes and build resilient and smart cities. Hence, grasses and trees that constituted the component of physical planning also serves as green belt, wind breaker, carbon monoxide absorber, and storm water infiltrator, fresh and quality air to the environment. The scanty and informal alteration of these greens initiated by environmental experts has activated many environmental problems and interrupted tremendous biodiversity that could be monetized in urban village, community, neighbourhood, district, suburb and urban areas that requires greening attention. But the deliberation for development, redevelopment, protection and alteration of greens in urban suburb environment required public participation through political stakeholder in physical planning to embraces ecological, cultural, and historic contribution. However, environmental stakeholders such as architects, estate surveyor and engineers are anxious of involving in government initiation and formal green infrastructure development, redevelopment, protection and alteration to actualise rebirth working, functional, aesthetics and smart environment.

II. Review of Relevant Literature

In US and Chinese cities,Jennifer, Jason and Joshua (2014) compared green infrastructureacross white and wealthy environment. Their findings shown thatgreens gains higher recognition for the purpose of environmentalfairness in US urban areas and stepped towards theexecutionpolicies to strengthen the quantity of greensparticularly insmallest planning unit characterised by poor parks compare to Chinese urban areas where state government has more powers on land location but related market inducements for urban greens. The work concludedthat urban greening method may be inconsistentdespite the fact thatestablishment of fresh green space to bridge environmental justice contribute to healthier communities and more aesthetic conditions, sky rocket housing prince and land values and sometimes redevelopmentand resettlement of the vicinityinhabitantswhere the green space policies were planned foradvantage.According to Andrew, Hannah, and Jason (2015) urban green space in terms of quality health encompasses ecological advantage through the denial of urban heat, reduction of greenhouse gas discharges and decrease of storm water. Also, green spaces possessstraight health assistances through the provision of urban inhabitableplaces for physical activity, social communication, and agreeingemotionalrenovation to commence. However, the study identifies existing challenges like

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

competing against urban planning dominances, economic deliberations and market militaries. Though recommended for the necessity of urban planning to suit the health aidsrequired with the requirements for the public and utility of urban green space will attend. In (2016),Word Health Organisation Meeting reported how road map of greens around the urban communities may solve different communal health challenges connected to obesity, cardiovascular effects, mental health and well-being.The report insisted that the only way todiscover the efficiency of urban green space intrusions to improvestrong urban settings will be through assemble of Europeanspecialists on green space and town planning to exchange ideas and practices about urban green space interferences. Thereport concluded that intervention components have been found effective in maximizing the environmental, health and equity benefits derived from urban green spaces.Marianne (2019) studied thecurrent climatedeviation and long term diseases through co-profits greens offers for human health and friendlyenvironment. His findings revealed that greens decline much chronic sickness starting from the symptoms, anxiety, obesity and cardiovascular disease. They maintained that green area contribute to number of environmental health advantages and have decline the likelihood of flooding, improve air quality and provide cooling and shade and such study gave birth tocooperative teamwork model that addressed strong issues which could be climate change and chronic ill health, through the common intervention of greens. The credence was provebyDavern, Farrar, Kendal,amd Giles-Corti (2016) who explained that open spacesendorse quality health, human comfort and virginenvironment. They illustrated that public open space (POS) and greens around developed areas accentuate the importantpurposes of planned city environment byincluding green zones. However, higher information for handling plan spaces areobligatory to withstand human health, environment, mental and social health of residents and communities,bionetworkfacilities and biodiversity.Rona,Claireand Mardie, (2018) examinedopportunities of green infrastructureinside healthcare environment through quantitative and qualitative. The study established thataccesses to greens inside healthcare environment capable for attachment areclassified as the barriers to access greens through consciousness, accessibility and comfort.Jochem, Gerard,.Bloemsmaab, Brinka, Lebretab and Janssen, (2018) Researched the relationship between greens, overweight and physical activity throughLogistic regressionand their findings shown strongdecline of overweight and additional outdoor physical activity in the highest order whereas TOP10NL examination conducted explained that green environment detailed positive relationship for resident around scarcer urban locations together withslighter buffers.AcrossWashington State,Abdullah, Celestina and Kerry (2016) usedmental health complaints,, anxiety-depression complaints, and general health status age, sex, race, income, education level, size of green space, and zip-code population and socio-economic conditions through behavioral risk factor surveillance system of 2006 toreviewedmental and general healthusing.The result revealedadded green that had association with less mental health complaints in cities zip-codes and size of forest in urban centres linked with fewer days of mental health complaints. The work suggested that otherclass of urban green mustbe calculatedseparately from simple green' and 'size' of forest considered importantwhen compared green space and cerebral health association.Jasper, Peter, Jens, Mette and Ulrika (2013)considered the relationship between urban green spaces and outdoor park (park areas closer to urban green spaces). The finding proved that association never exist among outdoor park zones, size, and distance. However,number of urban green areas in just a kilometre distance provednonexistence ofconnotation. On conflicting measures, park area closer to urban green regions hadconfirmatoryrelatives with size, walking/cycling routes, wooded areas, water features; lights, pleasant views, bike rack, and parking lot. Slater, Christiana and Gustat (2020) observed thatcloseness to nature or greens makesself-assured on physical and mental health position. Opined that parks and green spaces throughout COVID-19 eruptionconstrained the potentials of physical actions and mightinterruptliablepopulations. Theyremitted those temporary and sturdy acclamations to improvejunctures of green areas to populaceswhereasauthorizing for physical arrangement. Gianfredi, Buffoli, Rebecchi, Croci, Oradini-Alacreu, Stirparo, Marino, Odone,Capolongo and Signorelli (2021) examined the association between generalnearby urban green spaces and mental health outcomes (MH) and exactlymeasured physical action.The test established non- influence or anunwantedeffect on mental healthproducts and shown a positive effect of urban greenareas and both mental health and park zone. The studywas concerned forboth significant of greensappearance and the status of conservation, renovation, familiarity to built-up areas. The conclusion of their studystood concordant and designatedthat urban green roved perhaps appreciated property on mental health and bodily actions and necessary to public health expert and bureaucrats involved in urban planning, publicfitnessraise, and improvement of wellbeing and social justice.Oradini, Rebecchi, Mezzoiuso, Croci, Buffoli, Odone, Signorelli and Capolongo (2020) Accessed Medline and Embase, interdisciplinary squad of medical registrars and architects on the progress of determining urban green space. The authorscategorized health harvests into five dissimilarsituations (cardiovascular, obesity, respiratory, neoplasia and mental health) and exposedunwantedassociations of ailmentexistence and urban greenareasoverallquantity while size, outwarddistinction and easeremainedpowerfullyevocative variables. The researchabridged that metropolises are steadilyrotating tounsafehollows for unalikeemergent public health difficulties and lectured how the work can aidurban planners, maindepositors, approachesoriginators and humanities to arrangement and flowdominant greens, and convalesceCommunity Health in urban areas.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

III. Materials and Method

The study gave insight on urban greens through secondary and primary data sourcesalthough Port Harcourt and its suburb constituted the targeted population. The research acquires secondary data from the instrument ofearlier work ongreen walls, environmentalfunctions and alteration fromcirculated and uncirculatedprovisions. The circulated materials involve e-books, undergraduate, post graduate research work, conference/seminar, working papers, official records and other academic reports. The aspect of primary data beaconed on environmentalqualities, urban greening and public health status obtained from questionnaire oral interview andenvironmental observation inclusive. Besides, thequestions contained in thequestionnaire were structured on 5-research scale of evaluation: exceptional green= 5,very good green= 4, good green= 3, poorly green = 2and green altered= 1.A total of 350(100%)questionnaires were administered to the 4selected neighbourhoods representing the entire study area.However,Rumuibekwehad50 questionnaire representing (10%), Rumuola 100 (30%),Mosco Road/ PH Town 70 (15%) and Azikiwe 130 (35%).On the view of 350 questionnaires shared, 315 (92%) were reverted for analysis. The chi-squarestatistical test, Duncan's Multiple Range Test (DMRT) andspearman's rho correlation coefficientconducted the scientific analysis. see table 1

Table 1: The Selected and SampledNeighbourhood for the Study Area

S/N	Investigated Neighbourhood	Population	Household	Sampled Size	%
1	Rumuibekwe,	10,254	8,641	50	10.00
2	Rumuola	29, 412	12,806	100	30.00
3	Mosco Road/ PH Town	21,332	10,505,	70	15.00
4	Azikiwe	35,173	14,509	130	35.00
TOTAL		**96,171**	**46,461**	**350**	**100.00**

(Researchers analysis 2023)

IV. Result and Discussion

Green Parapets Reduces Flood and Improves Environmental Potentials

The chi square (x^2) test for urban greens, reductions of flood and improvement of environmental potentialshad strong relationship of ($x^2 = 499.87 < 0.005$) =degree of freedom, P= probability value on decision taking with 5 point research assessment. Suggesting that greens parapets such as grasses, trees, shrubs and others formed some of the physical development components that reduces environmental flooding in prone or vulnerable areas through the absorption of storms water, reduction of erosion, heat etc and enhancement of quality environment in all aspect. This implies that streets, neighbourhood andland uses of Port Harcourt that developed outside greens retains storm and stagnant waters and became flooding during the raining seasons or rivers overflows its bank.Apart from abating flood, storm and stagnant water, greens offersair quality, cooling, shade and environment that decline noise, air and other pollution. The findings cycled the recent work ofMarianne (2019) whoconfirmed thatgreens contributeto number of environmental health advantages and have decline the likelihood of flooding, improve air quality and provide cooling and shade.See table 2 below

Table 2: Greens Parapets Reduces Flood and Improves Environmental Potentials

Analysis	EG	VGG	GG	PG	NG	P- Value	X^2	Alpha Level
Observed	201	92	40	13	5	499.87	0.00	0.05
Expected	135.2	135.2	135.2	135.2				

(Researchers analysis 2023)

Variation of Property Greensamong Income Population of Port Harcourt Nigeria

The Duncans Multiple Range Test (DMRT) applied determines the integration of greens on land uses developedby the high, medium andlowincome inhabitants of Port Harcourt. The analysis revealed significant differences for the greening of land uses developed or builtby the lowincome population of Port Harcourt reported(25.22) significant value, medium income residents at(29.21)and highincome population with a mean value of (24.22). Theinferences anchored on glaringdissimilarity of greens integration, development and availability on spaces own by high incomeresidents and other income groupsin Port Harcourt

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

Nigeria.Suggestingthatflooding, lack of quality air, aesthetics, shade cooling; air noise pollution and other environmental calamities are minimal (10%) for streets, neighbourhood, estates and quarters developed by the higher income resident irrespective of land use(residential, commercial, industrial, institution and recreational land uses) and location. The reason behind the scenario or situation is that 95% of higher income residents of the Port Harcourt coastal region understand the immediate environment, consult professional services of an architect, town planners, civil engineers, other members of built environment and adhere to specification and avoidance of environmental challenges during the development of macro and micro environment. See table 3 for details

Table 3: Variation of Properties Greening Among Residents in Port Harcourt Nigeria

Duncan Group	N	Mean	Group	Income group	Built land use
A	41	29.21	1	High	Excellent green
B	62	25.22	2	Medium	Scanty green
C	14	24.23	3	Low	No green at all

Researcher analysis 2023

Socio-Economic Status and Implications of Land Use Greening in Port Harcourt Nigeria

(A) Education attainment: The scientific test on the empathy for educationalattainmentand environmental greening gave assessment report of 'excellent green' of ($r = 0.285$, $p<.05$).The suggestions pointed on positiveliaisonbetween green environment and educationalattainment of Port Harcourt residents. The higher the educational attainment of the land developers, the higher theenvironment or land uses greening. This implies that the strength of the relationship counted healthy, as the measurement of determination recorded 10.0% which indicates 10percent shared adjustment implying that, the education attainmentaids to explainexactly 10% of the greeningand environmental qualityfor developed and development of macro and micro environment in Port-Harcourt Nigeria.

Population: The methodical assessment in respect to greening environment and population shown a constantrelationship of ($r =-0.53$, $p<0.5$) which put forward that there is a negative relationship between the greening of various land uses or proposed physical development and land developers population in Port Harcourt metropolis.This suggests the amount of 5.19 % determination and indicates how population of the entireenvironmental assistjust 5.5% for greening the existing and proposed physical/land usedevelopment for micro and macro development in Port-Harcourt.

Occupational Prestige: The systematic analysis for occupational prestige and environmental greening of existing or propose land uses for development lackconnexion in Port Harcourt metropolis at ($r = - .043$ $p > .05$). The implicationdirected that greening of an environmentaffixed on awareness and education on green wall and its environmental, social and economic benefits.From the analyses, nature of job and positions occupied in societies are not criteria or strong determinants for adequate greening, expectbuilding plan approval that mandated residents of the area to allot 10% of the propose development for the uses and development of green parapets take domain in urban and peri-urban areas of Port Harcourt metropolis.

Table 4: Spearman's rho correlation coefficient for Environmental Greening

Socio-economic condition	**Statistics**	**Greening**
Education Attainment	Spearman's rho Correlation	0.285**
	Significant point	.000
	Sample Size	350
Occupational Prestige	Spearman's rho Correlation	-.053**
	Significant point	.000
	Sample Size	350
Population	Spearman's rho Correlation	-.043**
	Significant point	.000

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

	Sample Size	350

Environmental Survey 2023

V. Recommendations

1. To increase greenparapets, reduces flooding and improves environmental potentials in Port Harcourt, policy makers on urban planningmust ensure that greening variation that exist between properties developed or own by high income class and others income groupmust be eradicated. Such eradication willsrestore equalgreening in all the land uses and restore greening justice, knowledge and awareness in all theneighbourhoods, streets and towns.

2. Physical planning efforts are required for the provision and protection of built green infrastructure through constituted taskforce for green infrastructure, civil defence and neighbourhood vigilantes or guard. The provision of such social security personnel will protect and improve urban and perigreens and areas perceived green infrastructure insecure will reduce and thus declining environmental calamities associated with alteration and non-inclusion of greens in urban development.

3.since informal alteration of greens occurs on regular basis, town planners should take into consideration all the informal development for urban and suburb domains when planning for new urban and urban renewal and the need to review existing planning schemes with the aim of sanctioning informal green infrastructure demolishers.

VI. Conclusion

The research analysedgreen parapets and environment of Port Harcourt consideringfloodreduction, environmental improvement and potentials,dissimilarities of properties greening andthe implications ofsocio-economic statusand land use greening. The result identifiedthat positive relationships emerge between urban greens, reductions of flood and improvement of environmental potentials in Port Harcourt.Furthermore, revealed significant differences in greening of land uses developed or built by various income inhabitants. However, the study pointedthathigher educational attainment enhancedenvironmental qualityor land use greening while human population and occupational prestige had a week relationship with land use greening.

References

1. Abdullah, A.,,Celestina, B.L, Kerry, R.B (2016)''Does green space matter? Exploring relationships between green space type and health indicators'' Urban Forestry and Urban Greening, 20 (1) 407-418.
2. Andrew, C.K. L., Hannah, C. J., and Jason, H. (2015)'' Value of urban green spaces in promoting healthy living and wellbeing'' prospects for planning, (8)131—137DOI https://doi.org/10.2147/RMHP.S61654
3. Davern, M., Farrar, A., Kendal, D. amd Giles-Corti, B. (2016)'' Quality Green Public Open Space Supporting Health, Wellbeing and Biodiversity: A Literature Review, Report prepared for the Heart Foundation, SA Health, Department of Environment, Water and Natural Resources, Office for Recreation and Sport, and Local Government Association (SA)'' University of Melbourne: Victoria.
4. Jasper, S., Peter, B., Jens, T., Mette, T., Ulrika, K.S.(2013) Associations between physical activity and characteristics of urban green space Urban Forestry and Urban Greening, 12 (1) , 109-116
5. Jennifer, R.W., Jason, B. and Joshua, P.N. (2014) Urban'' Green Space, Public Health, and Environmental Justice: The Challenge of Making Cities 'just Green Enough'' Landscape and Urban Planning, 125, 234-244
6. Jochem O.K., Gerard H. L..Bloemsmaab D., W, C., Brinka, B. B., Lebretab, N. .Janssen, A.H (2018) Green space definition affects associations of green space with overweight and physical activity Environmental Research 160, 531-540 https://doi.org/10.1016/j.envres.2017.10.027
7. Marianne, K. (2019)'' Commentary – Climate change, health and green space co-benefits Health Promotion and Chronic Disease Prevention in Canada'' Research Policy and Practice Health Promotion and Chronic Disease Prevention in Canada, 39 (4) 1 -12.
8. A Oradini-Alacreu, A Rebecchi, A G Mezzoiuso, R Croci, M Buffoli, A Odone, C Signorelli, S Capolongo (2020) ''Measuring health outcomes of OECD countries' urban green space, with a special focus on Milan (Italy)''European Journal of Public Health,https://doi.org/10.1093/eurpub/ckaa166.161
9. Slater SJ, Christiana RW, Gustat J. (2020)'' Recommendations for Keeping Parks and Green Space Accessible for Mental and Physical Health During COVID-19 and Other Pandemics''DOI: http://dx.doi.org/10.5888/pcd17.200204external icon.
10. Ubani, P., Tobi, D. S.,Amakiri, W. B. H and Neebee, B.(2023)'' Green Wall and Public Health Facilities in Port Harcourt Metropolis Nigeria'' International Journal of Latest Technology in Engineering, management and Applied Science, 12 (8) 33- 39.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XII, Issue XI, November 2023

11. Tobi, D. S., and Amakiri, W. B. H.(2023)'' Environmental Analysis and Implications of Green Infrastructure Alteration in Nigeria City '' Conference Paper Presented at the 54th National Conference/ Annual General Meeting (AGM) of the Nigeria Institute of Town Planners (NITP) 23rd – 27th October 2023, Asaba Nigeria
12. V Gianfredi, M Buffoli, A Rebecchi, R Croci, A Oradini-Alacreu, G Stirparo, A Marino, A Odone, S Capolongo, C Signorelli (2021) Urban Green Spaces and Public Health Outcomes: a systematic review of literature, European Journal of Public Health,31(3)164.638, https://doi.org/10.1093/eurpub/ckab164.638
13. Word Health Organisation Meeting Report Bonn Germany (2016) Urban Green Space and Health: Intervention Impacts and Effectiveness, 1-33